ARINC IA Project Initiation/Modification (APIM)

Name of proposed project **APIM #: __15-102_**

FLS Working Group

Supplement 2 to ARINC Report 667: Guidance for the Management of Field Loadable Software

Suggested Subcommittee assignment

The purpose of this document is to open a project for update of ARINC 667. The ARINC specification covers guidance for the management of software that is loadable aboard aircraft, referred to as Field Loadable Software (FLS).

New technologies, shifts in maintenance practices, policies in handling and management of Field Loadable Software (FLS), comprising both Loadable Software Aircraft Parts (LSAP) and Aeronautical Data Bases or (ADBs) and recent update to Electronic Distribution of Software, drive the need for this specification to be re-opened.

Project Scope

ARINC 667 was last updated November 12, 2010. Several standards relating to airborne software management have been updated. This has been a continuous evolutionary process to foster and maintain common terminology, management practices, communications standards, storage formats, and distribution methods related to aircraft software configuration management.

Aircraft software management requires common understanding and guidance to remain in sync with all operators, suppliers, OEMs, and airframe manufacturers. ARINC Report 667 has continued to be the industry guide and reference document for high level aspects of software management. It provides standardized language and terms, software categorization and criticality, software security guidance, etc.

It is very important to update this document to be in sync with evolved technology, methodology, and terminology that has changed in several other ARINC standards related to aircraft software management. Several documents have been updated since the current supplement 1 of ARINC 667 was published. Examples of ARINC standards that are related to aircraft software management are as follows:

ARINC Number	Sup	Title	Publish Date	Note
ARINC Report 614	0	Standard Firmware Loader for Avionics Shops	September 30, 1989	
ARINC Report 615-3	3	Airborne Computer High Speed Data Loader	August 15, 1992	
ARINC Report 615-4	4	Airborne Computer High Speed Data Loader	May 6, 2002	
ARINC Report 666	0	Electronic Distribution of Software	May 17, 2002	
ARINC Report 665-3	3	Loadable Software Standards	August 12, 2005	
ARINC Report 615A-3	3	Software Data Loader Using Ethernet Interface	June 30, 2007	
ARINC Report 827	0	Electronic Distribution of Software by Crate (EDS Crate)	September 15, 2010	
ARINC Report 667-1	1	Guidance for the Management of Field Loadable Software	November 12, 2010	AMC Standard
ARINC Report 835	0	Guidance for Security of Loadable Software Parts Using Digital Signatures	November 23, 2011	
ARINC Report 826-1	1	Software Data Loader Using CAN Interface	December 20, 2013	
ARINC Report 835-1	1	Guidance for Security of Loadable Software Parts Using Digital Signatures	January 2, 2014	Supplement only for patent issue
ARINC Specification 838	0	Loadable Software Part Definition Format	January 2, 2014	
ARINC Specification 641	0	Logical Software Part Packaging for Transport	July 31, 2015	
ARINC Specification 843	0	ARINC Specification 843: Aircraft Software Common Configuration Reporting	July 31, 2015	
ARINC Specification 844	0	Enhanced ARINC 429 Data Loading, and Target implementation considerations for ARINC 615-3 and ARINC 615-4 targets	April 1, 2016	Still In Work. Soon to be Published.
ARINC Report 849	0	Software Data Loading Specification Requirements for the Avionics Shop Environment.	April 1, 2016	Still In Work. Soon to be Published.

Project Benefit

Benefits for Airlines:

Airlines, and this industry as a whole, benefit tremendously by having this standard that defines the common terminology and processes used in the wide scope of aircraft software & data management. The document provides the high level overview of data loading issues related to format, distribution, storage, security, definitions of software types and process standards for each, and aircraft software configuration management.

This document also provides reference to other ARINC documents regarding specific aspects of software data loading.

Benefits for Airframe Manufacturers:

Airframe manufacturers use this document to keep their processes in sync with those of their customers, the Airlines. This document is developed by consensus with the airframe manufacturer representative. It defines the common expectations, requirements, and language of their customer in regard to software data loading and management.

Benefits for Avionics Equipment Suppliers:

Avionics Equipment Suppliers use this document to keep their processes in

sync with those of their customers, the Airlines. This document is developed by consensus with the airframe manufacturer representative. It defines the common expectations, requirements, and language of their customer in regard to software data loading and management.

Airlines supporting effort

- Proposed Chairman:
  - Ted Patmore – Delta Air Lines
- Lead Air Line:
  - Delta Air Lines– Ted Patmore
- Supporting Air Lines:
  - American Air Lines – Rod Gates
- Air Lines:
  - …
- Airframe Manufacturers:
  - Airbus – Anne Frayssignes
  - Boeing – Todd Gould
  -
- Avionics Vendors:
  - Honeywell –Steve Darr
  - Teledyne Controls – Chris Kuske
  - Sagem – Denis Delville
  - Techsat – William McRae
  - Aero Instruments
  - Avionics Interface Technology – Troy Troshynska
  - Auvation – Ian Vinnicombe

Issues to be worked

- Update terms, part number formats, and other methods as a result of new technology.
- Support changes due to A838, A665-4/5,- A641
- UMS – Need better guidance for installing on AC for troubleshooting. Easier way to get UMS part on a plane. Improve airline process for putting UMS on aircraft.
- Software configuration management
- Configuration management tools.
- USB security and usage
- PDL Security Guidance

Recommended Coordination with other groups

- This project should be closely coordinated with the AEEC Software Data Loading (SDL) WG
- AEEC NIS regarding security issues.

Projects/programs supported by work

Software data management is an continuous effort by the industry to maintain the continuing airworthiness of airline fleets. Changing technology that requires new methods and terminology require standards that are in sync with the latest processes that maintain compliant aircraft software configuration.

Timetable for projects/programs

02/2018

Documents to be produced and date of expected result

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Comments

Anything else deemed useful to the committees for prioritization of this work.

Meetings

Activity	Mtgs	Mtg-Days
ARINC 667 Supp 2	*6*	*12*
Document b	*# of mtgs*	*# of mtg days*

For IA Staff use

Date Received: _____ **IA Staff Assigned:** _____

Potential impact: _____

*(**A**. Safety **B**. Regulatory **C**. New aircraft/system **D**. Other)*

Forward to committee(s) (AEEC, AMC, FSEMC): _____ **Date Forward:** _____

Committee resolution: _____

*(**0** Withdrawn **1** Authorized **2** Deferred **3** More detail needed 4 Rejected)*

Assigned Priority: _____ **Date of Resolution:** _____

A. – High (execute first) **B.** – Normal (may be deferred for A.)

Assigned to SC/WG: _____